

AMENDMENT UNDER 37 C.F.R. § 1.114(c)
U.S. APPLN. NO.: 10/632,919

ATTY DOCKET NO.: Q75814

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1 (currently amended): ~~A compression bonding method in which an element is bonded to a substrate, the method comprising:~~

~~forming a layer having metal on at least a part of a surface of the substrate;~~

~~disposing the element on the layer; and~~

~~bonding the element to the layer by applying pressure on the element toward the layer and irradiating light to which the element is transparent, on a bonding area between the element and the layer.~~ The method of claim 11, wherein the light provides activating energy which allows an interaction between the layer and the element approximately at room temperature.

2 (currently amended): The method of claim ~~1~~ 11, wherein the element is formed of silica glass.

3 (currently amended): The method of claim ~~1~~ 11, wherein the substrate is a silicon substrate.

4. (currently amended): ~~A compression bonding method in which an element is bonded to a substrate, the method comprising:~~

~~forming a layer having metal on at least a part of a surface of the substrate;~~

~~disposing the element on the layer; and~~

AMENDMENT UNDER 37 C.F.R. § 1.114(c)
U.S. APPLN. NO.: 10/632,919

ATTY DOCKET NO.: Q75814

~~bonding the element to the layer by applying pressure on the element toward the layer and irradiating light to which the element is transparent, on a bonding area between the element and the layer~~ The method of claim 11, wherein the light is irradiated on the bonding area for a predetermined time after the application of pressure.

5 (canceled).

6 (currently amended): The method of claim ~~1~~ 11, wherein the light has a wavelength of not less than approximately 180 nm.

7 (currently amended): The method of claim ~~1~~ 11, wherein the pressure, which acts at an interface between the layer and the element, ruptures a native oxide film on the layer and allows the element to contact a non-oxidized element of the layer.

8 (canceled).

9 (currently amended): The method of claim ~~8~~ 11, wherein a cross section of the element is round.

10 (currently amended): The method of claim ~~8~~ 11, wherein the element is an optical element that is one of a lens, an optical fiber, and a prism.

AMENDMENT UNDER 37 C.F.R. § 1.114(c)
U.S. APPLN. NO.: 10/632,919

ATTY DOCKET NO.: Q75814

11. (previously presented): A compression bonding method in which an element is bonded to a substrate, the method comprising:

forming a layer having metal on at least a part of a surface of the substrate;

disposing the element on the layer; and

bonding the element to the layer by applying pressure on the element toward the layer and irradiating light to which the element is transparent, on a bonding area between the element and the layer, wherein the layer is a discontinuous layer.

12. (original): The method of claim 11, wherein the layer is formed as strips or dots.

13. (original): The method of claim 11, wherein a surface of the element which contacts the layer is substantially flat.

14-20 (canceled).

21. (currently amended): ~~A compression bonding method in which an element is bonded to a substrate, the method comprising:~~

~~forming a layer having metal on at least a part of a surface of the substrate;~~

~~disposing the element on the layer; and~~

~~bonding the element to the layer by applying pressure on the element toward the layer and irradiating light to which the element is transparent, on a bonding area between the element and the layer.~~ The method of claim 11, wherein the light is substantially in the UV wavelength range.

AMENDMENT UNDER 37 C.F.R. § 1.114(c)
U.S. APPLN. NO.: 10/632,919

ATTY DOCKET NO.: Q75814

22-24 (canceled).

25. (currently amended): The method of claim ~~1~~ 11, wherein the metal includes aluminum.

26. (previously presented): The method of claim 7, wherein the non-oxidized element is aluminum.

27. (canceled).